

### **REMARKS**

Claims 1-66 are now pending in the application. Paragraph 31 of the specification has been amended to update the serial number of the U.S. Application cited therein. Claims 1, 17, 32, and 47 have been amended to more particularly point out and distinctly claim the invention. Support for these amendments is found, for example, in Applicant's specification: Claims 1, 17, 32, and 47 at Paragraph 22 (page 10), Paragraph 24 (page 11), and Paragraph 34 (page 17). As such, Applicant requests entry of the amendments in Claims 1, 17, 32, and 47. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-14 and 17-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoffman, Jr. et al. (U.S. Pat. No. 6,264,823) hereinafter "the Hoffman reference" in view of Madono (U.S. Pat. No. 4,584,328) hereinafter "the Madono reference". Claims 15, 16, 30 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoffman in view of Madono and further in view of Johnson et al. (U.S. Pat. No. 5,126,089) hereinafter "the Johnson reference". Claims 32-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson in view of Madono and further in view of Hoffman. These rejections are respectfully traversed.

Independent Claims 1, 17, 32, and 47 from which Claims 2-16, 18-31, 33-46, and 48-66 depend, have been amended to more particularly point out and claim the present invention, in particular specifying a limitation that a disintegration additive is water-soluble.

Hence, Claims 1 and 14 and dependent Claims 2-14 and 18-29 are not rendered obvious by Hoffman in view of Madono. The Hoffman reference fails to disclose, suggest, or provide any motivation for removing residual casting material comprising a water-soluble disintegration additive from a cast metal part. Hoffman has absolutely no disclosure of removing a casting material from a metal part, nonetheless a casting material including a water-soluble disintegration additive. Hoffman only discloses cleaning rust, scale, smut, petroleum derived contaminants, oils, greases, flux, carbonization, nonmetallic coatings, corrosion, paint, and dirt from metal parts in order to permit recycling or reuse. Col. 1, lines 29-34, for example. Hoffman has no teaching or suggestion to use an apparatus to remove residual casting material comprising a water-soluble disintegration additive, which are recitations in each of Claims 1-14 and 17-29.

The Madono reference specifically teaches away from the use of a water-soluble disintegration additive that is used in a material to form a mold for casting. For example, Madono lists the disadvantages associated with a casting mold material that might become wet, stating that if the mold becomes wet, there is a reduction in baked strength and an increase in casting defects. Col. 2, lines 27-31. To eliminate “these disadvantages” associated with water solubility, the additives are encapsulated with a protective plastic so that the additive compounds “scarcely become moist, even after they are heated at the high temperatures of core baking”. See Col. 2 lines 32-34 and 41-44. The object of Madono is to protect the core material from weakening by exposure to water. Col. 2 lines 25-29. There would be no suggestion to one of skill in the art to combine Hoffman (that discloses contacting a part with an electrolyte including water) with the Madono reference (that not only has no disclosure or suggestion to

contact a material with an electrolyte, but explicitly teaches away from such contact with water). The objectives of the Madono reference contradict the objectives of the Hoffman reference and would not lead one of skill in the art to combine their respective teachings. Further, there is no teaching, suggestion, or motivation to combine the Hoffman reference with the Madono reference to arrive at the subject matter in Claims 1-14 and 17-29. As such, Applicant respectfully requests withdrawal of the rejection and allowance of these claims.

Claims 15, 16, 30 and 31 stand rejected as being unpatentable over Hoffman in view of Madono and further in view of Johnson. As described above, there is no teaching, suggestion, or motivation to combine the Hoffman reference with the Madono reference, and more specifically, the Madono reference teaches away from such a combination. Further, the Johnson reference fails to disclose a disintegration additive in any form. The Johnson reference discloses exposing the sand core to humid air to weaken the binder resin of the sand core. There is no teaching, suggestion, or motivation in Johnson to use a cleaner dispersing system and/or a parts washer, or more specifically, to employ a water-soluble disintegration additive within a casting material that is removed by the cleaner dispersing system/parts washer. The Johnson reference fails to address the deficiencies of the Hoffman reference combined with the Madono reference, and fails to provide any suggestion or motivation of using a water-soluble additive in a casting material that is removed from a part by an apparatus having a cleaner dispersing system. As such, Claims 15, 16, 30 and 31 are not rendered obvious by Hoffman over Madono in view of Johnson, and Applicant requests withdrawal of the rejection and allowance of these claims.

Likewise, Claims 32-66 stand rejected as being obvious over Johnson in view of Madono and further in view of Hoffman. As previously discussed, independent Claims 32 and 47 have been amended to recite a material for forming a cast including a water-soluble disintegration additive. As described above, the Johnson reference fails to disclose a disintegration additive in any form. The Johnson reference has no teaching, suggestion, or motivation to use a parts washer and/or a cleaner dispersing system, or more particularly to employ a water-soluble disintegration additive within a casting material that is removed from the part by the washer.

In the same vane, the Madono reference specifically teaches away from using a water-soluble disintegration additive in a material used to form a mold for casting. For example, Madono enumerates the disadvantages associated with using a water-soluble material, and eliminates water solubility of the additives by encapsulating them with a plastic. See Col. 2 lines 32-34 and 41-44. Claims 32 and 47 recite a material for making a mold for casting that includes a starting material of a water-soluble disintegration additive, which the Madono reference explicitly teaches away from. Hoffman has absolutely no disclosure of removing a casting material from a metal part, nonetheless a casting material including a water-soluble disintegration additive. As such, the Johnson reference in combination with the Madono reference and the Hoffman reference, fails to disclose, suggest, or provide motivation to arrive at the subject matter claimed in independent Claims 35, 47 or dependent Claims 36-46 and 48-66, and Applicant respectfully requests that the Examiner withdraw the rejections. Applicant submits that Claims 32-66 are not rendered obvious over Johnson in view of Madono in view of Hoffman, and contain patentable subject matter and are allowable.

There is no suggestion or motivation to combine the cited references, and therefore, the claims at issue are patentably distinct over the cited references. The Examiner has not met the burden to establish a *prima facie* case of obviousness with respect to Claims 1-66. Applicant respectfully requests the Examiner withdraw the obviousness rejection and allow Claims 1-66.

#### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: March 28, 2005

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